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ABSTRACT

Sixteen teaching centers, active in the Teachers' Centers Exchange, were interviewed once a week for 10 weeks to examine to what degree communication occurred between network participants without passing through the filter of the Teachers' Centers Exchange staff. Also investigated was the degree to which individuals interact because they have similiar attributes or concerns. All participants were asked the following questions each week: (1) With whom do you interact? (2) What is their affiliation or where are they located? (3) Who initiated the conversation (the center in the study, or the person with whom the contact was made)? (4) What was the mode of the interaction (by telephone, letter, or face-to-face interaction)? (5) What topic or topics were discussed during the contact? (6) Was this part of a continuing interaction with this person or organization? and (7) Has your center had contact with this person or organization before about any other topics? In this report of the study, data from these questions are presented and analyzed in numerous tables and charts. Two conclusions drawn from the data include: There was a great amount of inter-center contact occurring, and teachers' center practitioners turn most often to their colleagues for advice and assistance. (JM)

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AN ANALYSIS OF THE EXTENT, METHOD, AND CONTENT OF INTERACTIONS AMONG PARTICIPANTS IN AN INFORMAL, INTERACTIVE EDUCATION NETWORK

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[MJ]
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Far West Laboratory for Educational
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Introduction

From 1978 through 1982 the Teachers' Centers Exchange facilitated an interactive network of teachers' centers. The purpose of this network was to provide teachers' centers practitioners with easy access to knowledge, advice, and support from other network members. The Exchange staff was an active participant and/or intermediary in many of these interactions. However, the success of this network rested in large measure on the degree to which participants initiate and continue interactions among themselves without relying on a central facilitative office for receipt and redirection of requests and responses. This characteristic distinguishes interactive networks from broadcast networks (in which information from one network participant is received and then made available to all other participants). Additionally, the Teachers' Centers Exchange network is a learning network as distinguished from an information network. That is, participants expect their interactions to result in increased knowledge about and support for their common tasks. Many members of the network are known to many others, and trust is established across several communication paths.

Network participants share many similar tasks, find themselves in similar contexts, and in many cases have very similar philosophies of education. Perhaps the network can be described as possessing a high degree of homophily: the degree to which pairs of individuals who interact are similar in certain attributes, such as beliefs, values, education, social status, and the like. However, the network is not entirely homophilous. Similarities are for the most part based upon job related tasks, and contextual settings. And, although many friendship dyads do exist, participants are dissimilar in many ways.

The intent of this study was to examine the degree to which communication occurred between network participants without passing through the filter of the Teachers' Centers Exchange staff and the degree to which individuals interact because they have similar attributes and concerns. In addition to obtaining a quantitative measure of the degree to which communication occurs, information was obtained about the nature of that information, including the content and the occupational roles of persons in communication with the study participants. Because the Exchange would cease its operations at the end of 1982, this study was intended to provide direction for continued networking.

Sampling Procedures

The Teachers' Centers Exchange Directory, (1980 Edition) prepared by the Exchange staff from descriptions provided by centers participating in the network, contains descriptions of 228 teachers' centers. In April, 1981, all 228 centers were contacted by mail, given a description of the study, and asked if they would be interested in volunteering for participation. The invitational letter indicated that participants would be expected to maintain records of all of their contacts beyond their service area, and to discuss

these contacts in telephone interviews every week during a ten week period. Affirmative responses were received from 58 teachers' centers. (It cannot be assumed that only 58 were interested in the study; many who chose not to participate wrote extended explanations for their inability to participate, expressed regrets, and requested a copy of the study when it was completed.)

From this list of 58 volunteers, 16 teachers' centers were selected for participation. Selection was intentionally non-random; the researcher wanted to obtain a profile of the network and therefore wanted the centers in the study to be representative of centers in the network.

The Exchange staff has long observed the presence of a subnetwork of teachers' centers whose service area is primarily rural. In fact, some of the Teachers' Centers Exchange conferences (called workparties) were specifically planned to involve participants in this subnetwork of rural teachers' centers. Thus the sample was constructed to include centers who were identified as having a service area that was primarily rural, and other centers whose service area was predominantly urban and suburban. Six rural and ten non-rural centers were selected.

Another factor influencing the sampling process was source of funding. From 1978 to 1982 there had been a United States Department of Education program for support of teachers' centers. Centers supported under this federal program were required to have a policy board which included a majority of classroom teachers, were required to conform to other federal regulations, and were in competition with other potential centers in applying for federal money. Although the Exchange staff sensed that centers supported under the federal Teacher Centers Program were more similar than dissimilar with other teachers' centers, they wanted to identify these two categories in the sample. Federal teachers' centers typically had larger budgets than do their non-federal counterparts; they also had larger staffs. It was thought that perhaps they would also have higher communication rates.

There was another reason for making the federal and non-federal funding source distinction. There have been teachers' centers in some locations for over ten years. The Teachers' Centers Exchange had already been established and operating when the federal Teacher Centers Program began. Consequently, the staff wondered if the presence of these new centers, with a different funding source, would create division within the network, or whether these centers would find themselves integrated into the larger teachers' centers movement. So the sample was divided according to the categories of federal or non-federal; these labels were intended to indicate only the source of financial support. The final decision resulted in a sample that included nine non-federal centers and seven federal centers. The four way breakdown was:

Non-federal, non-rural centers 6

Federal, non-rural centers 4

Federal, rural centers 3

Non-federal, rural centers 3

Geographic representation was also considered; the 16 centers in the sample represented 14 states. Although two states were represented by two centers, those centers were of different types.

Data Collection

In May, 1981, the 16 participating centers were contacted by mail, provided with information about when the telephone calls would occur, and given a copy of the questions that would be asked. Participants were also given a copy of the form which the interviewer would be using during the telephone conversation. Each participating center was informed that they would be interviewed by telephone immediately after each of the ten identified weeks. Data were collected during the period of May 18 through September 25, 1981. (The months of July and August were excluded because many teachers' centers are closed during that period.)

Participants were instructed to record data only for those contacts which were with persons outside their service area. (This research task was not concerned with the degree to which centers contacted people whom they were established to serve, but rather the degree to which they contacted other centers, people, and agencies.) The following questions were asked:

1. With whom did you interact?

2. What is their affiliation or where are they located?

3. Who initiated the conversation (the center in the study, or the person with whom the contact was made)?

4. What was the mode of interaction (by telephone, letter, or face-to-face interaction)?

5. What topic or topics were discussed during the contact?

6. Was this part of a continuing interaction with this person or organization?

7. Has your center had contact with this person or organization before about any other topics?

(The last two questions were intended to determine if there were patterns of continuity among the interactions.)

For each interaction reported, answers to all questions were recorded on a standard form. Additionally, every interview was recorded on tape; this allowed the researcher to verify impressions gained from the report forms. A quantitative report of the number of contacts, the categories of people with whom contact were made, and the nature of the contacts was derived from the forms; an analysis of the nature and the extent of network interactions was derived from the report forms and the 131 recorded interviews.

Not every center responded every week. Data for 29 of the potential 160 weeks were not obtained due to a number of factors. One center was a part of

a large urban school system which was on strike for four weeks of the study. Another center had a change in leadership over the summer; a new director was not selected and no one else on staff collected data or was designated to serve as a respondent. Another center lost their federal funding over the summer and for all intents and purposes shut down during the September data collection period. And in several cases centers reported no contacts had been made because the staff (especially in those centers which had only one full-time staff person) was travelling or on vacation during a particular week.

Data Organization

Once results were obtained, it was necessary to identify the nature of the contacts. In most cases this was straightforward; respondents had been asked to indicate whether the contact was initiated by their center or by the other person; by telephone, mail, or in person; whether it was part of a continuing interaction; and whether the center had had previous contact with this person or agency about other topics. However, two items required judgment on the part of the researcher.

When respondents indicated the affiliation of the person contacted, the responses were coded as belonging to one of seven categories: federal, non-rural teachers' center, non-federal non-rural teachers' center, federal rural teachers' center, non-federal rural teachers' center, state education agencies, other agencies (such as the federal Teacher Centers Program, representatives of teachers' unions, etc.), and a seventh category identified simply as "other." This category was used for all contacts which did not fit any of the other six.

Researcher judgment was also necessary in determining what topics were discussed. After reading contact reports and listening to interview tapes, topics were also organized into seven categories: teachers' center program issues, funding and financial support, meetings (including preparation for attending meetings), collaborative work, networking (used only when center made specific mention of conversations regarding the establishment or maintenance of a network or subnetwork), "sharing support," and "other."

The "networking category" was included because it was known that centers in some states were involved in statewide teachers' centers networks; the researcher sought to determine the extent to which centers were discussing that network activity. The category "sharing support" was borrowed from previous documentation activities of the Teachers' Centers Exchange.

A note on statistical significance. When the data for this study were submitted to the SPSS program, Chi-square test results were obtained. In every case the level of significance exceeded .01. Tests were also conducted for extrapolated data. However, tests on extrapolated data are often inappropriate. Consequently, Chi-square results are not reported for each table. The reader is advised that data from this sample always provided statistically significant results in the non-extrapolated format.

The Exchange staff has found that a number of conversations among teachers' centers are not related to substantive issues; it is not uncommon for one teachers' center director to contact another to provide emotive support during difficult times or to compliment a colleague on a job well done. As the data reveal, very few topics were coded in the category "other"--it was used simply as a last resort category when nothing else seemed to fit.

When coding was completed, data were fed to a computer using the Statistical Package for the Social Studies Program, and cross-tabulations and comparisons were drawn. The analysis of data is based on these results.

Analysis of Frequency of Contacts

The first data displayed are simply raw numbers and percentages of contacts (Table 1). Over the entire ten week period, 697 contacts were reported; during these contacts 892 topics were discussed. These data are reflective of interactions by centers in the Teachers' Centers Exchange network. They do not, however, present an accurate picture of the frequency and nature of contacts according to center type. The advantage of a stratified sample (with a much smaller number of rural centers, for example) is that a profile of contacts by centers in the network is obtained. But this can also distort.

TABLE 1: Number and Percent of Contacts Reported and Topics Discussed for Four Types of Teachers' Centers

TYPE OF CENTER	CONTACTS		TOPICS	
	N	%	N	%
Federal/Non-Rural	146	20.9	194	21.7
Non-Federal/Non-Rural	236	33.9	286	32.1
Federal/Rural	209	30.0	256	28.7
Non-Federal/Rural	106	15.2	156	17.5
TOTALS	697	100.0	892	100.0

For example, Table 1 suggests that non-federal/non-rural centers had the most contacts (N=236, %=33.9) and that non-federal/rural centers had the fewest contacts (N=106, %=15.2). However, there were twice as

many of the former type of centers. If the data are extrapolated, a picture of what would have resulted had there been an equal number of centers in each category, with every category reporting as frequently as did the most frequent category, is obtained.*

TABLE 2: Number and Percent of Contacts Reported and Topics Discussed for Four Types of Teachers' Centers (Data Extrapolated to Reflect Probable Reports If All Centers Had Reported Every Week

TYPE OF CENTER	CONTACTS		TOPICS	
	N	%	N	%
Federal/Non-Rural	146	20.9	192	21.5
Non-Federal/ Non-Rural	155	22.3	185	20.7
Federal/Rural	225	32.2	269	30.2
Non-Federal/Rural	171	24.5	246	27.6
TOTALS	697	100.0	892	100.0

Table 2 displays the results of extrapolation: now the previous smallest category (non-federal/rural) comes very close to the other three categories of centers, and in fact ranks second in number of contacts. Table 2 indicates that three categories of teachers' centers tend to have approximately equal rates of contact outside their service area; centers supported by the federal program and serving rural populations are the exception and have much higher

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*To obtain an average number of contacts by center type per week, the total number of contacts reported by centers in a category, was divided by the total number of weeks reported for all centers in that category. The greatest number of weeks reported for any category was 49 (for non-federal/nonrural centers); this was the factor used to raise the other three categories. Once each average was multiplied by 49, new percentages were then applied to the actual N of 697 so that one could see what numbers might be expected had each category had equal representation. The number of weeks reported for each category were: non-federal/non-rural, 49; federal/non-rural, 32; federal/rural, 30; non-federal/rural, 20.

(In tables used throughout this report, extrapolated figures are used so that readers may see the probable rates of contacts by each of the four types of centers had they been equally represented in their numbers and their frequency of reporting.)

Table 3 provides the same conclusions: it is included because it also gives a picture of the number of contacts centers were having on a weekly basis. It also illustrates how frequently centers were in touch with other centers, as well as how often their contacts confirmed a previous discussion.

TABLE 3: Average Number of Contacts Per Week, By Type of Center

Type of Center	Average Number of Contacts Per Week	Average Number of Contacts Per Week That Continued a Previously Discussed Topic with the Same Contact	Average Number of Contacts Per Week With Other Teachers' Centers Only	Average Number of Contacts Per Week That Continued a Previously Discussed Topic with the Same Teachers' Center
All Centers	5.32	3.97	3.42	2.50
Federal/Rural	6.96	5.53	3.70	3.10
Non-federal/ Rural	5.30	4.10	3.50	2.60
Non-federal/ Non-rural	4.81	3.67	3.47	2.51
Federal/ Non-Rural	4.56	2.88	3.03	1.84

Note that centers serving rural areas report more contacts per week. There are at least two possible explanations for these results. One is that the presence of a subnetwork of rural teachers' centers accounts for a higher number of contacts within the network. The other is that the centers serving rural populations are themselves isolated and must make more frequent use of contacts with other centers in order to stay in touch with developments. On the other hand, there is little reason to believe that centers in urban areas do not feel a need to be in touch with colleagues; indeed, it might be easier for them to do so. Perhaps they have sufficient other sources of information

and support to satisfy their needs, and thus do not need to talk to teachers' center colleagues as often.

Does rural context, or federal financial support, result in more contacts by teachers' centers? The next two tables address that question. Table 4 compares the number of contacts made by federal and nonfederal centers, and Table 5 compares the number of contacts of rural and non-rural centers. Although differences are not great, centers with federal financial support did report a higher number of contacts; centers serving rural areas also reported a higher number of contacts. Given these results, and results regarding center contacts with other centers (in which rural centers scored much higher) it would appear that rural centers and federal centers seem to have more contacts outside their service area.

Table 4: Number and Percent of Contacts and Topics for Federal and Non-Federal Centers

TYPE OF CENTER	CONTACTS		TOPICS	
	N	%	N	%
Federal	371	53.1	461	51.0
Non-Federal	326	46.9	431	48.3
TOTAL	697	100.0	892	100.0

Table 5: Number and Percent of Contacts and Topics for Rural and Non-Rural Centers

TYPE OF CENTER	CONTACTS		TOPICS	
	N	%	N	%
Rural	396	56.8	379	42.5
Non-Rural	301	43.2	513	57.5
TOTAL	697	100.0	892	100.0

Table 6 indicates the number of contacts centers in the study had with other teachers' centers. Respondents reported 448 contacts with other teachers' centers; this represents 64% of all contacts. In Table 6 these are divided according to type of center in the study, and type of center with whom they have contact. Here it can be seen that although federal rural centers had the highest nnumber of contacts with other teachers' centers, there is little difference between the four types (22.5% to 27.2%). Yet some very clear patterns are present in Table 6. Reading on the diagonal from upper left to lower right, one can see the percentage of total contacts that each center type had with other centers of their same type. The principle of homophily seems clearly present here.

Table 6: Center to Center Contacts for Centers in the Study with Other Centers, by Type of Center

CENTERS IN STUDY		CONTACTS REPORTED WITH OTHER TEACHERS' CENTERS, BY TYPE				
		Federal Non-Rural	Non-Federal Non-Rural	Federal Rural	Non-Federal Rural	Totals
Federal Non-Rural	N	56	17	27	0	146
	%	12.5	3.8	6.0	0	22.3
Non-Federal Non-Rural	N	25	51	11	25	112
	%	5.6	11.4	2.4	5.6	25.0
Federal Non-Rural	N	47	11	57	7	122
	%	10.5	2.4	12.7	1.6	27.2
Non-Federal Rural	N	33	23	3	55	114
	%	7.4	5.1	0.7	12.3	25.4
TOTALS	N	161	102	98	87	448
	%	35.9	22.8	21.9	19.4	100.0

Tables 7 and 8 continue the theme of comparing federal and nonfederal centers and rural and non-rural centers. Both report data only for contacts reported with other teachers' centers. Table 7 reveals that federal and non-federal teachers' centers reported having about the same number of contacts with all other teachers' centers. However, federal centers had many more contacts with other federal centers; non-federal centers had more contacts with other non-federal centers. These results suggest that there has been less integration of federal and non-federal centers than had been anticipated.

This may be explained in part by the fact that federal centers were expected to attend a number of meetings within their own area (cluster meetings) as well as an annual national meeting of federal teachers' centers. Many contacts among federal centers may have been made in preparation for these meetings. This will be explored when an analysis of topics discussed is presented. Nevertheless, the dramatic difference in number of contacts among similar and dissimilar centers cannot be ignored.

Table 7: Center to Center Contacts for Federal and Non-Federal Centers

CENTERS IN STUDY		CONTACTS REPORTED WITH OTHER TEACHERS' CENTERS		
		Federal	Non-Federal	Totals
Federal	N	186	33	219
	%	41.5	7.6	49.1
Non-Federal	N	73	156	229
	%	16.2	34.7	50.9
TOTALS	N	259	189	448
	%	57.7	42.3	100.0

Table 8: Center to Center Contacts for Rural and Non-Rural Centers

CENTERS IN STUDY		CONTACTS REPORTED WITH OTHER TEACHERS' CENTERS		
		Rural	Non-Rural	Totals
Rural	N	123	114	237
	%	27.4	25.3	52.7
Non-Rural	N	64	148	212
	%	14.3	33.0	47.3
TOTALS	N	187	262	448
	%	41.7	58.3	100.0

The results reported in Table 8 are less extreme. While it is true that rural centers reported more contacts with all other teachers' centers than did non-rural centers, the differences aren't great. As might be expected, rural centers reported more contact with other rural centers, although the difference between their contacts with rural and with non-rural centers is small. And non-rural centers do not contact rural centers very often. Perhaps this is attributable to the presence of a network of rural teachers' centers. An alternative explanation may be that non-rural centers believe rural centers have very little to offer them by way of program advice, as their conditions are perceived to be very different.

Table 9 includes data about the percent of contacts rural teachers' centers in the study reported with all other rural teachers' centers. When these data are also considered according to source of financial support, the pattern of high frequency of contacts with centers sharing the same financial support base becomes extreme. 92 percent of all rural teachers' center contacts with other rural teachers' centers were with centers having the same source of support.

TABLE 9: Percent of Contacts Among Rural Teachers' Centers According to Source of Financial Support

RURAL CENTERS REPORTING CONTACTS WITH OTHER CENTERS	CONTACTS REPORTED WITH OTHER RURAL CENTERS	
	Federal Support	Non-Federal Support
Federal Support	46.7	5.7
Non-Federal Support	2.5	45.1

The data regarding total number of contacts has suggested the principle of homophily may be operating: of 697 contacts, 448 (64.3%) were with other teachers' centers. Data in Tables 5-8 also suggest that within the network of teachers' centers homophily is also at work. This is especially the case when center-to-center contacts are analyzed according to source of financial support.

Is it the case that funding source can determine if homophily can be inferred from this single variable? The possibility that there are differences among centers is examined by considering what other (non-teachers' center) contacts were reported, and topics discussed.

Analysis of Topics Discussed, Affiliation of Persons Contacted

Tables 1 and 2 included data on both the number of contacts centers reported, and the number of topics discussed. Thus far the analysis has dealt only with contacts, of which there were 697, or an average of 5.3 contacts per week per center. During these contacts, 892 topics were discussed, averaging 6.81 topics per week. With whom did these 16 centers interact? What did they discuss?

Table 10 provides a general answer to these two questions. Earlier it was noted that of 697 contacts, 448 (64.2%) were with other teachers' centers. That ratio also holds for topics were discussed: of 892 topics discussed, 595 (66.7%) were with other teachers' centers. The most frequently discussed topic was Teachers' Center Programs (37.9%) followed by Planning for or Informing about Meetings (27.4%). Far below these two topics are Networking (9.8%), Funding (8.4%), and Sharing Support (7.3%).

When centers interact with other centers, as well as with other contacts beyond their service area, programming is the most frequently discussed topic. This is hardly surprising, as their major purpose is to provide programs that serve teachers. That planning for or informing about meetings is the second most popular topic presents a puzzle; in these difficult financial times, it would seem that funding would be a major topic. Possibly discussions of financial concerns were more confined to local contacts such as school district officials. Even so, the state education agencies, the staff of the federal Teacher Centers Program, and even other centers are all likely contacts for discussing financial support. (Half of all conversations about funding were center-to-center.) Yet centers talked more about their networks than they did about their financial support.

Why should meetings command so much of the center's attention? An analysis of the individual center reports, and a review of the tape recorded interviews, helps explain this result. During the data collection period the annual national meeting of the Federal Teacher Centers Program was held. Federal centers were talking with their colleagues about presentations, materials they would bring, handouts they would prepare, and to a lesser extent transportation and lodging concerns. Additionally, regional meetings (referred to as cluster meetings) were also held and every federal center in the sample received some mail and telephone contacts regarding these meetings.

The possibility that the high percent of discussions about meetings can be linked to source of support is borne out by the fact that 73% of all discussions about meetings involved the federal centers in the sample. Tables 12 and 13 indicate this; Table 12 also reveals very little difference among rural and non-rural centers on this topic; both types of federal centers spent more time discussing meetings than did their colleagues in non-federal centers.

This imbalance between federal and non-federal centers may partially explain why less interaction was reported between federal and non-federal centers. It may be that the presence of these meetings forced federal-to-federal center interactions that would not otherwise have occurred. Data

Table 10. Frequencies for Topics Discussed with Other Teachers' Centers and with Other Agencies

TOPICS		DISCUSSANTS: Other Teachers' Centers	Other Agencies	TOTALS
PROGRAMMING	N	221	117	338
	Row %	65.3	34.1	
	Column %	24.8	13.1	37.9
MEETINGS	N	171	74	245
	Row %	69.8	30.2	
	Column %	19.2	8.2	27.4
NETWORKING	N	61	26	87
	Row %	70.1	29.8	
	Column %	6.8	3.0	9.8
FUNDING	N	39	36	75
	Row %	52.0	48.0	
	Column %	4.4	4.0	8.4
SHARING SUPPORT	N	54	11	65
	Row %	83.1	16.9	
	Column %	6.0	1.3	7.3
COLLABORATIVE WORK	N	37	10	47
	Row %	78.8	21.2	
	Column %	4.2	1.1	5.3
OTHER	N	12	23	35
	Row %	34.3	65.7	
	Column %	1.3	2.6	3.9
TOTALS	N	595	297	892
	Column %	66.7	33.3	100.0

regarding the length of each conversation are not available so it cannot be known if duscussions about meetings were much shorter than other discussions. Analyses of tape recordings of the interviews suggest that subjects talked at more length about the topics of networking, collaborative work, and program; however, this has not been demonstrated quantitatively.

It is true, however, that subtle involuntariness may be at work; these data reveal what occurred, but not why it occurred. Had centers with a sudden financial crisis been present in the sample, perhaps funding would have been a more popular topic, even though those conversations would not be about topics of substance or long-term interest on the part of the participants.

Table 11 expands on Table 10, indicating with whom centers interacted. Agencies such as professional organizations and the federal government were involved in conversations about funding and meetings. They were also the most frequent participants in the "other" category. (However, this category represented less than 4% of the topics discussed, and most of the reports came from one center.) State education agencies were most involved in discussions of networks; in two states the state agency was an important participant in plans for a statewide network of teachers' centers.

Table 12 provides an overview of what centers were discussing, according to type of center. It shows a much lower frequency of discussions of teachers' center program on the part of federal centers that are not in rural areas. Many of these centers serve large school districts. Possibly their program concerns are being met by others in their service area. That urban and suburban, federally supported centers turn more to local sources for advice about programming may be borne out by their singularly low participation in discussions about networking. Rural centers without federal support discussed this topic nearly five times as often. An apparent financial stability of non-federal centers in suburban or urban areas may be revealed by their extremely low participation in discussions of funding; alternatively, they may be turning more to local resources for these discussions, as those are their traditional sources of support. Local sources of support may be less accessible to rural centers, and federal centers may have a pattern of seeking non-local support.

Analysis of what topics were discussed allows a closer look at possible differences between federal and non-federal centers; Table 13 displays these differences. Non-federal centers discussed program concerns much more frequently; almost one-fourth of their conversations (23%) were on that topic. Federal centers discussed funding twice as often and meetings almost three times as often. Non-federal centers discussed both networking and collaborative work much more than did their federally supported colleagues. These last two comparisons suggest that non-federal centers may feel more secure, and more able to reach out to other centers and agencies. Because most of the non-federal centers are older (the first federal centers opened in September 1978) they may have spent more time establishing links with other centers. Their programs may be so well developed that they are more frequently

Table 11: Topics Discussed According to Type of Contact

TOPICS		CONTACTS WITH				
		Other Centers	SEAs	Agencies	Other	TOTALS
PROGRAM	N	221	35	24	58	338
	%	65.3	10.4	7.1	17.2	100.0
MEETINGS	N	171	30	37	7	245
	%	69.8	12.2	15.1	2.9	100.0
NETWORKING	N	61	20	3	3	87
	%	70.2	23.0	3.4	3.4	100.0
FUNDING	N	39	12	13	11	75
	%	52.0	16.0	17.3	14.7	100.0
SHARING SUPPORT	N	54	0	5	6	65
	%	83.1	0	7.7	9.2	100.0
COLLABORATIVE WORK	N	37	1	0	9	47
	%	78.8	2.1	0	19.1	100.0
OTHER	N	12	5	13	5	35
	%	34.3	14.3	37.1	14.3	100.0
TOTALS	N	595	103	95	99	892
	%	66.7	11.5	10.7	11.1	100.0

Table 12: Frequencies of Topics Discussed by Different Types of Centers in the Study

TOPICS		CENTERS IN STUDY				
		Federal Non-Rural	Non-Federal Non-Rural	Federal Rural	Non-Federal Rural	TOTALS
PROGRAM	N	46	102	87	103	338
	Row %	13.6	30.2	25.7	30.5	100.0
	Column %	5.2	11.4	9.8	11.5	37.9
MEETINGS	N	81	28	97	39	245
	Row %	33.06	11.42	39.6	15.9	100.0
	Column %	9.1	3.1	10.8	4.4	27.4
NETWORKING	N	8	23	18	38	87
	Row %	9.2	26.4	20.7	43.67	100.0
	Column %	0.9	2.6	2.0	4.3	9.8
FUNDING	N	25	2	25	23	75
	Row %	33.3	2.6	33.3	30.7	100.0
	Column %	2.8	0.2	2.8	2.6	8.4
SHARING SUPPORT	N	13	21	21	10	65
	Row %	20.1	32.3	32.3	15.4	100.0
	Column %	1.5	2.3	2.3	1.2	7.3
COLLABORA-TIVE WORK	N	9	12	1	25	47
	Row %	19.1	25.5	2.13	53.2	100.0
	Column %	1.0	1.3	0.1	2.9	5.3
OTHER	N	7	1	21	6	35
	Row %	20.0	2.85	60.0	17.1	100.0
	Column %	0.8	0.1	2.4	0.6	3.9
TOTALS	N	192	185	270	246	892
	Column %	21.5	20.7	30.2	27.6	100.0

Table 13: Frequencies of Topics Discussed by Federal and Non-Federal Centers in the Study

TOPICS		CENTERS IN STUDY		
		Federal	Non-Federal	Totals
PROGRAMMING	N	133	205	338
	Row %	39.4	60.6	
	Column %	13.9	24.0	37.9
MEETINGS	N	178	67	245
	Row %	72.0	27.3	
	Column %	19.8	7.6	27.4
NETWORKING	N	26	61	87
	Row %	29.9	70.1	
	Column %	2.9	6.9	9.8
FUNDING	N	50	25	75
	Row %	66.7	33.3	
	Column %	6.0	2.4	8.4
SHARING SUPPORT	N	34	31	65
	Row %	52.3	47.7	
	Column %	3.4	3.9	7.3
COLLABORA-TIVE WORK	N	10	37	47
	Row %	21.3	78.7	
	Column %	1.1	4.2	5.3
OTHER	N	28	7	35
	Row %	80.0	20.0	
	Column %	3.3	0.6	3.9
TOTALS	N	461	431	892
	Column %	50.4	49.6	100.0

involved in collaboration, as well as being more receptive to network participation. There may be other explanations; regardless of the underlying reasons, Table 13 suggests that real differences exist between federal and non-federal teachers' centers, at least in terms of what topics they discuss with persons outside their service areas.

Such differences are not so apparent when a comparison of rural and non-rural centers is made (Table 14). Although rural centers appear to discuss funding and networking much more frequently, Table 12, which displays results for all four categories of centers, provides an explanation for those condensed results. It is the non-federal, rural centers which raise the frequency of discussions about networking, and it is the previously mentioned lack of discussion of funding matters on the part of non-federal/non-rural centers that lowers the frequency of non-rural centers discussions on this topic. Other differences are very small; the demographic characteristic of rural/non-rural is apparently less important in determining what topics are of concern to teachers' centers.

It should be remembered that the coding of reports into seven general categories ignores some potentially important information. Possibly the program ideas discussed by rural centers differed from those discussed by urban and suburban centers. However, these differences do not appear in the data, nor do they appear obvious in the recordings of the 131 interviews.

Table 14: Frequencies of Topics Discussed by Rural and Non-Rural Centers in the Study

TOPICS		CENTERS IN THE STUDY		
		Rural	Non-Rural	Totals
PROGRAMMING	N	190	148	338
	Row %	56.2	43.8	
	Column %	15.8	22.1	37.9
MEETINGS	N	136	109	245
	Row %	55.5	44.5	
	Column %	13.2	14.2	27.4
NETWORKING	N	56	31	87
	Row %	64.3	35.6	
	Column %	4.9	4.9	9.8
FUNDING	N	48	27	75
	Row %	64.0	36.0	
	Column %	4.8	3.6	8.4
SHARING SUPPORT	N	31	34	65
	Row %	47.7	52.3	
	Column %	2.7	4.6	7.3
COLLABORA-TIVE WORK	N	26	21	47
	Row %	55.3	44.7	
	Column %	2.0	3.3	5.3
OTHER	N	27	8	35
	Row %	77.1	22.9	
	Column %	2.8	1.1	3.9
TOTALS	N	515	377	892
	Column %	46.2	53.8	100.0

Some Data On The Network

To further develop a profile of the network, respondents were asked to indicate if contacts were of a continuing nature. Of the 697 contacts, 620 (89%) were with people or organizations with whom at least one previous contact had been made. Further, for 75% of the contacts respondents reported that they had previously talked with that person or organization about the same topic. This is a remarkably high frequency of continuing contacts, and suggests that network participants are in regular contact with each other. Table 15 displays the number and percent of all contacts according to category of center, as did Tables 1 and 2. In Table 15, these data are compared with the number and percent of continuing interactions with the same center or organization on the same topic. The ratio across types of centers is consistent.

Table 15: Number and Percent of Contacts, and Number and Percent of Continuing Contacts With the Same Center or Organization About the Same Topic

Type of Center		Contacts	Continuing Contacts
Federal/Rural	N	225	178
	%	32.2	34.2
Non-Federal/Rural	N	171	132
	%	24.5	25.4
Federal/Non-Rural	N	146	92
	%	20.9	17.7
Non-Federal/ Non-Rural	N	155	118
	%	22.3	22.7
TOTAL	N	697	520

When contacts were reported as being part of a continuing discussion with another center or agency, information about the topic discussed becomes of interest. In Table 16 a pattern emerges: networking, collaborative work, and funding command the highest percent of continuing contacts. Discussions of meetings, and of program, are very close. Only "sharing support" is much lower; this topic is more likely to be reported after a specific action or event.

Table 16: Topics That Were Discussed During Continuing Interactions

TOPIC		CONTINUING INTERACTION	
		Yes	No
PROGRAMMING	N	248	90
	%	73.4	26.6
MEETINGS	N	191	54
	%	78.0	22.0
NETWORKING	N	78	9
	%	89.7	10.3
FUNDING	N	60	15
	%	80.0	20.0
SHARING SUPPORT	N	43	22
	%	66.2	33.8
COLLABORATIVE WORK	N	41	6
	%	87.2	12.8
OTHER	N	17	18
	%	48.6	51.4
TOTAL	N	678	214
	%	76.0	24.0

Hindsight allows a methodological comment. It would have been more informative if participants had been asked if they consider the contact to be a continuing interaction on a topic with some suggestion as to the definition of "continuing." For example, if one center contacted another to discuss materials to be displayed at a meeting, and the contacted center called back with new suggestions after working with the materials, this was coded as a continuing interaction around the topic of "meetings." In fact, these two conversations are probably all that were held on this specific matter. It is incorrect to infer that in-depth discussions, continuing over time, are occurring whenever a report of a continuing interaction is made. For the topics of networking, program, and perhaps for collaborative work,

the inference may have some basis in fact. The data do reveal that about one-quarter of all topics discussed had not been discussed with the same center or agency before. This, in itself, suggests a supportive, collegial network. This interpretation is also supported by Table 17, which displays results, by center type, of reports of previous contact. Very little difference between center types can be inferred; the percent of contacts with which previous contact had been made ranges from 87 to 92 percent. But the totals are impressive; of 697 contacts, 620 were not new.

To help determine if the 16 centers participating in the study were more active in their patterns of contacting others, they were asked to indicate whether they or the other person initiated the contact. Of 697 contacts, 339 (49%) were initiated by the centers in the study; 358 (51%) were initiated by the other party. Because no apparent differences exist across center types, full tables are not presented. One fact suggests consistency with earlier data: of contacts initiated by centers, 67% were to other centers. Of contacts received by centers, 61% were from other centers.

Table 17: Number and Percent of Previous Contacts With the Same Person, By Type of Center

TYPE OF CENTER		PREVIOUS CONTACT Yes	No	Total
Federal/ Non-Rural	N	131	15	146
	%	89.7	10.3	20.9
Non-Federal/ Non-Rural	N	133	22	155
	%	85.6	14.4	22.3
Federal/ Rural	N	208	17	225
	%	92.3	7.7	32.2
Non-Federal/ Rural	N	148	23	171
	%	86.8	13.2	24.5
TOTAL	N	620	77	697
	%	88.9	11.1	100.0

One last item of information on communications within the network is of interest. Clearly the telephone is the most popular mode of communication, even though very few contacts are within a local calling area. Table 18 reveals that non-federal centers used the telephone less than federal centers, but the differences are small. Non-federal centers reported a higher percent of face-to-face interactions. These consist of visits to the center, or

visits to the location of the person being contacted. In a very few instances they include contacts made at a third location, but in every instance these were deliberate; the center or the other party made a specific request to meet. (All reports of unplanned contacts within the context of some larger meeting were excluded from the data base.)

Table 18: Mode of Communication For Contacts, by Center Type

TYPE OF CENTER		MODE OF COMMUNICATION			
		Phone	Mail	Face-to-Face	Total
Federal/ Non-Rural	N	105	25	15	146
	%	72.6	17.1	10.3	20.9
Non-Federal/ Non-Rural	N	85	41	29	155
	%	54.7	26.7	18.6	22.3
Federal/ Rural	N	143	70	12	225
	%	63.6	31.1	5.3	32.2
Non-Federal/ Rural	N	103	29	39	171
	%	60.4	17.0	22.6	24.5
TOTAL	N	437	165	95	697
	%	62.6	23.7	13.5	100.0

One can infer that all centers do value personal interaction, and use the mail much less frequently. This must in part be a reflection of increased long-distance usage more generally. On the other hand, the Teachers' Centers Exchange has documented approximately 16,000 contacts over a three-year period: of those contacts, 33% were made by telephone, 52% by mail, and 15% in person. These data may not present a fair comparison as they include a large amount of initial inquiries to the Exchange. Their West Coast location probably encouraged mail contacts, as did the fact that contacts were being made with strangers. Data on the percent of telephone contacts made with centers in the network would help illuminate this question.

Summary, Conclusions, and Caveats

This study attempted to identify some characteristics of the network of teachers' centers served by the Exchange. By asking 16 representative centers to identify the frequency of their contacts outside their service area, the

topics they discussed, the affiliation of those contacted, and the mode of communication, a profile of network communications emerges. Put briefly, two-thirds of all contacts outside their service area were with other teachers' centers. And three-fourths of their contacts continued a conversation on a specific topic. On average, centers were in contact with other centers three to four times per week. When they talked, teachers' centers programs and teachers' center meetings were most frequently discussed; funding, collaborative work, networking, and sharing support were less frequent topics. They initiated about half of their contacts. The telephone was used for almost two-thirds of their contacts.

There were differences within the network. Federally supported centers conversed more about meetings, non-federal centers about program. Rural centers had more contacts than urban and suburban centers. And centers interacted much more with other centers of their same type (federal/rural, non-federal/non-rural, etc.) than with all other centers. That rural and non-rural centers would differ is perhaps to be expected, given their different contexts. Less expected were the differences between federal and non-federal centers. They participated in the same networks, they shared similar philosophies, they read much the same educational literature, and they had the same purpose: to serve teachers. Before concluding that there exist inherent differences, or that obtaining federal support somehow results in very different orientations, some caveats are in order.

This study was limited to contacts made by centers to or from their home bases. No data were reported regarding contacts during national or regional meetings, including Teachers' Centers Exchange sponsored Workparties (which involved many federal and non-federal centers). These meetings had program concerns as their focus. Many of the conversations between federal and non-federal centers about program were, therefore, not included in these results.

A similar caveat is appropriate in considering the results for federal centers alone. Regional ("cluster") meetings and one large national meeting occurred during the course of data gathering for the study. Details of travel, program plans, materials needed, etc., were discussed before and after these meetings. These were coded and entered into the reservoir of data as contacts about the topic of "meetings." But all of the contacts at the meetings, including the hours of conversation about establishing regional network, about collaborating, about personal concern and support for colleagues' situations, and about programs at their centers, never found their way into these results.

Yet another caveat: time was never considered. A call to ask whether a staff person would be at a meeting had the same value as a two-hour, face-to-face conversation about program development. Valences could not be assigned to contacts because 16 respondents would not have consistent standards. So

no standards of quality of exchange were ever entered into the data. Further, the identification of a contact as being a continuation of a conversation would have benefited by greater specificity; the extent to which one teachers' centers staff person continues to interact with one colleague at another center about a substantive and complex topic over time remains unanswered.

Informal, interactive networking is most of all a personal act. It should not be surprising that staff of federal centers, having more opportunities to meet staff from other federal centers at regional and national meetings, would seek and receive contacts from those they know personally. If the network possessed a high degree of homophily it seems likely that teachers' centers would be in contact with other centers, and even more likely that they would seek contact with those other centers that are most like themselves. In all recorded interviews there was never a suggestion of discord within the network. And at Exchange sponsored meetings, where representatives of federal and non-federal, rural and non-rural centers were able to interact, no patterns of interaction by type of center were apparent. But when center staff contacted other centers, they tended to select colleagues from centers similar to their own.

Structural differences, and differences about programming concerns, do not seem present in the network, or at least are not manifested according to rural/urban or federal/non-federal differences. This is supported by the lack of differences in number of contacts the four types of centers had with state education agencies and other agencies. This study clearly confirms two aspects of the network: there was a great amount of inter-center contact occurring in the field, and teachers' center practitioners turn most often to their colleagues for advice and assistance.

Now that the Exchange has ceased to serve as a facilitator of this network, it would be instructive to replicate this study. Those centers which began with support from the federal Teacher Centers Program no longer have that formal, financial affiliation. Are they in more, or less frequent contact with district-supported centers? Perhaps more importantly, does the network continue to exist at the same level of intensity? If not, the presence of the Exchange as a central facilitator of inter-center contact may be viewed as important to the encouragement of contacts among the nodes of the network. If, on the other hand, contacts continue at the same frequency, one could conclude that the network has become self-sustaining and that practitioners of an educational innovation value contact with one another to the extent that they maintain an interactive network.

APPENDIX A

Initial Letter to 222 Teachers' Centers

Teachers' Centers Exchange
1855 FOLSOM STREET, SAN FRANCISCO
CALIFORNIA 94103 • (415) 565-3095

April 10, 1981

Dear Network Participants:

The Exchange is about to undertake a brief investigation of a topic that has always been of interest to us. I'm writing (with apologies for the unavoidable use of a form letter) to ask if your center has the time to assist us in this investigation. Let me explain what we intend to accomplish, and why we want to do it.

Kathleen is in the process of writing a reflective study of the Exchange and our interactions with participants in the teachers' centers network. To accomplish this she has the benefit of over six years of interacting with network participants, files that reach back to 1974, staff conversations and reports, and the study recently completed by Eleanor Duckworth, Vicky Steinitz, and Neil Sutherland. She won't suffer for lack of information! However, over the past few years we have not been able to document the extent to which network participants are in touch with one another without channeling their communications through our staff.

This information is important for us because it will tell us much about the success of the network. Although we often hear of your contacts with one another, and you often mention that you have been in contact with another center before talking with us, we really don't have any way of knowing just how often network participants communicate with each other. An informal and interactive network is characterized by participants' easy access to each others' knowledge, advice, and support; we want to learn how often you take advantage of that accessibility.

To do this in a thorough and completely reliable way, we would need much time, field interviewers, and a very large sample of centers from the network. We have neither the time nor the resources to do this. What we can do is conduct a much smaller and shorter study that will give us a sample of the communications that occur among network participants. This is where we would like your help.

From the centers who tell us they are able to join us in this study, we will select fifteen, and conduct ten short telephone interviews with them: two in May (probably beginning about the middle of the month) and one each week during June and September. If you are selected for the

study, you will be asked to keep a daily log, using whatever method best suits you, to remind you of all contacts you have with people outside the area served by your center, and which are communications about teachers' center concerns.

The purpose of this log is simply to remind you (or some other member of the staff) of all the "networking" that has occurred over the past two weeks. You will use the log as reference during our phone interviews. We will not collect the logs. We think the phone interviews will require only ten or fifteen minutes to complete. We will not be asking for details or your analysis of your conversations or letters, but will ask simply with whom the contact was made, for what purpose, and whether that contact was part of an ongoing interaction about a topic or concern.

Do you think you will be able to help us with this task? If so, please complete the short form that I've enclosed with this letter and send it back as soon as possible. We must know who is able and willing to participate no later than May 1. During the week of May 4-8 we will identify the fifteen centers that we would like to include in the study and inform them by phone. (In making our selection, we'll be mindful of geographic location, urban and rural service areas, participation in subnetworks, source of financial support, and age of the centers.)

I'll also try to let everyone else who responds know that we cannot include them in the study, and why we decided as we did, but I can't promise a quick response. In other words, if you write that you are able to participate, and don't hear from me by May 11, you may assume that we are not planning to include your center in the study.

I hope that many of you will want to participate, and have the time to help us. The larger our response, the more likely it will be that we can select a sample that represents a cross-section of the network. However, I know these are busy times and that many of you will want to participate but simply cannot commit the required time. But if you can help, please do respond right away. I look forward to hearing from you.

Many thanks,

William M. Hering

P.S. If you have questions to ask before you decide, give me, Kathleen, Gretchen or Lorraine a call, or drop a note and I'll call you.

WMH:rah
encl.

RESPONSE FORM

Complete this form if you are willing and able to participate in a brief study of interactions among network participants. Return this form to: Bill Hering, Teachers' Centers Exchange, 1855 Folsom St., San Francisco, CA 94103.

1. Please provide the name of your center, the address, and the telephone number. Also, please give us the name of the person who be interviewed, should your center be a part of this study:

   _____

   _____

   _____

2. When was your center established? _____

3. What is the primary source of financial support for the center? (i.e., local school district, Department of Education Teacher Centers Program, etc.)

   _____

4. Would you describe your center as primarily serving teachers in rural areas, urban areas, or something in-between?

   _____

5. Please indicate which Teachers' Centers Exchange Workparties were attended by someone from your center:

   _____

   _____

   _____

   _____

6. Please list any Miniawards your center has received from the Exchange:

   _____

   _____

   _____

   _____

7. Please identify any subnetworks in which your center participates:

   _____

   _____

APPENDIX B

Letter Sent to Center Selected for the Study

Teachers' Centers Exchange
1855 FOLSOM STREET, SAN FRANCISCO
CALIFORNIA 94103 • (415) 565-3095

May 12, 1981

TO: Jane Applegate, Steven Carzasty, Marge Curtiss, Mary Hamilton, Bena Kallick, Barbara Keelan, Karen Kent, Julie King, Kick Krueger, Reba Lowrey, Mimi McKenna, Sharon Meier, Marti Richardson, Ron Semmens, Jack Turner, Wanda Ward

FROM: Bill Hering

When I wrote requesting volunteers for our small study of interactions within the network, I promised to let everyone selected know, by telephone, if they were included. I didn't expect to be so far behind! But, finally, we have selected sixteen teachers' centers for our documentation effort. Your center is one of those selected, and I've had to resort to the mails in order to reach all of you on time. We're very grateful that you are willing to participate.

We would like you to select some method that seems best for you and all your staff to note each and every contact (by mail, phone, or in person) you have with another teachers' center or person involved in teachers' center activities during a given week. This could be in the form of a log by the telephone(s), a log for the desk of every staff person, you or someone else checking at the end of each day or some other method. The information need not be in great detail, but it should be sufficient to remind you of the nature of the contact.

Lorraine, Gretchen, and I will call the person you identified on the form you returned to us, and ask you to respond, for each contact made the previous week, to five questions. I've enclosed a schedule of weeks we would like you to help with this study, the dates we will be calling, and the question we will ask.

We're asking for information about contacts with people in other centers, or with people interested in centers. Each of you have many contacts with people in your districts or within the area you normally serve; we're not attempting to document these contacts. We want to know the nature and extent to which networking occurs across sites; we already know that teachers' centers serve as local networks.

I think each telephone interview won't take more than a few minutes. We'll all become more comfortable with this after the first few weeks. But

please phone if you have questions, if you find you are no longer able to participate, or if you're unsure about which contacts to record. (It's better to record too much than too little, so if in doubt, make a record.)

Again, many thanks for assisting the Exchange as we seek to discover the extent of the network, and to learn of conversations that are continuing within the network. I'm looking forward to the opportunity to speak with each of you more frequently.

QUESTIONS TO BE ANSWERED FOR EACH CONTACT

1. With whom did you interact? Who initiated the conversation?
2. What is their affiliation or where are they located?
3. How did you interact (telephone, letter, face-to-face)? If face-to-face, where, in what context?
4. What was the topic of the contact?
5. Was this a part of a continuing interaction?
6. Has the center had contact with this person before about any other topics?

NOTE: the "you" in these questions may refer to the person responding from the center or to some other person who has recorded the contact.

SCHEDULE OF CALLS FOR REPORTING OF NETWORKING ACTIVITIES

Documenting Week	Calling Dates
May 18-22	May 26, 27
May 26-29	June 4, 5
June 1-5	June 8, 9
June 8-12	June 15, 16
June 15-19	June 22, 23
June 29-July 3	July 7, 8
August 31-September 4	September 8, 9
September 8-11	September 14, 15
September 14-18	September 21, 22
September 21-25	September 28, 29

APPENDIX C

List of Centers Participating in the Study

List of Centers Participating in the Study

Hot Springs Teacher Center	Hot Springs, AR
Southwest Arkansas Teacher Center	Texarkana, AR
Marin Teachers' Learning Cooperative	San Rafael, CA
Teachers' Center at Fairfield	Fairfield, CT
West Hartford Teacher Center	West Hartford, CT
North Shore Education Center	Beverly, MA
Staples Teacher Center	Staples, MN
Western Nebraska Rural Teacher Center	Sidney, NE
Las Cruces Teachers' Center	Las Cruces, NM
Pittsford District Teacher Center	Pittsford, NY
Teaching Learning Center	Charlotte, NC
Mayville Teaching Learning Center	Mayville, ND
Franklin County Teacher Center	Columbus, OH
BEST Center	Eugene, OR
Philadelphia Teacher Parent Center	Philadelphia, PA
Knoxville City-Knox County Teacher Center	Knoxville, TN